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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,903	11/28/2001	Hideaki Maeda	1417-371	7361

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EXAMINER

ALEJANDRO, RAYMOND

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application N .

09/994,903

Applicant(s)

MAEDA ET AL.

Examiner .

Raymond Alejandro

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election of Group I (claims 1-4 and 7-10) in Paper No. 6 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### *Priority*

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Specification*

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," "the present invention" etc.

### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 4 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. The language "wherein the manganese content y is 0.01 to 0.15" in claim 4 is unclear, thereby rendering the scope of the claim indefinite. It is noted that "x" does represent the molar amount of manganese (Mn) in the composition formula as well as the molar amount "y" has been used in the composition represented by the formula of claim 1 to denote the molar amount of magnesium (Mg). *Thus, the present claim language wherein molar amount of manganese is represented by "y" is indefinite. For purpose of prosecution, the claim has been construed as further intending to limit the manganese content "x".*

7. Claim 7 is indefinite because it depends from non-elected claim 5. Thus, the intended scope of the claim is unclear or undetermined.

### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-4 and 7-10 are rejected under 35 U.S.C. 102(a) as being anticipated by the European publication EP 1154503.

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The instant application is directed to cathode active material wherein the disclosed inventive concept comprises the specific composition chemical formula. Other limitations include the lattice constant; the specific surface area and content of the substituent element.

As for claims 1, 7-10:

The EP'503 publication disclose the following (ABSTRACT):

(57) A non-aqueous electrolyte cell having improved cyclic characteristics at elevated temperatures. The non-aqueous electrolyte cell includes a positive electrode, a negative electrode and a non-aqueous electrolyte. The positive electrode contains, as a positive electrode active material, a lithium transition metal composite oxide represented by the general formula  $\text{LiCo}_x\text{A}_y\text{B}_z\text{O}_2$  where A denotes at least one selected from the group consisting of Al, Cr, V, Mn and Fe, B denotes at least one selected from the group consisting of Mg and Ca and x, y and z are such that  $0.9 \leq x < 1$ ,  $0.001 \leq y \leq 0.05$  and  $0.001 < z < 0.05$ .

Sample 28 shows the following (page 19, lines 23-30):

Sample 28

25 [0136]  $\text{LiCo}_{0.98}\text{Mn}_{0.01}\text{Mg}_{0.01}\text{O}_2$  was synthesized in the same way as sample 1, except using manganese oxide in place of aluminum oxide and mixing lithium carbonate, cobalt oxide, manganese oxide and magnesium carbonate to a Li:Co:Mn:Mg molar ratio of 1.02:0.98:0.01:0.01.

[0137] Using this  $\text{LiCo}_{0.98}\text{Mn}_{0.01}\text{Mg}_{0.01}\text{O}_2$  as the positive electrode active material, a cylindrically-shaped non-aqueous electrolyte cell was prepared in the same way as sample 1.

As for claims 1-3 and 7-10:

The specific lattice constant, BET specific surface area and crystallite size are inherent because the prior art product seems to be identical except that the prior art is silent as to such inherent characteristics. *See MPEP 2112.*

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As for claim 4:

Sample 28 shows the following (page 19, lines 23-30):

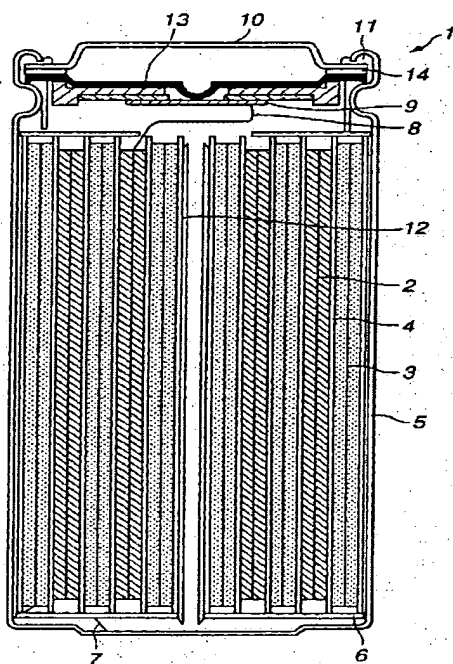
## Sample 28

25 [0136]  $\text{LiCo}_{0.98}\text{Mn}_{0.01}\text{Mg}_{0.01}\text{O}_2$  was synthesized in the same way as sample 1, except using manganese oxide in place of aluminum oxide and mixing lithium carbonate, cobalt oxide, manganese oxide and magnesium carbonate to a Li:Co:Mn:Mg molar ratio of 1.02:0.98:0.01:0.01.

[0137] Using this  $\text{LiCo}_{0.98}\text{Mn}_{0.01}\text{Mg}_{0.01}\text{O}_2$  as the positive electrode active material, a cylindrically-shaped non-aqueous electrolyte cell was prepared in the same way as sample 1.

As for claim 10:

Figure 1 below shows the battery comprising an anode, a cathode, a separator, an electrolyte therein.

**FIG. 1**

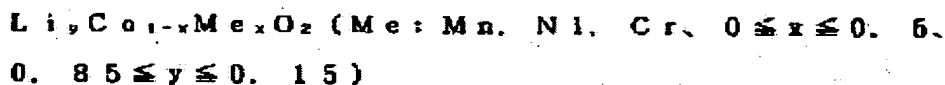
Thus, the claims are anticipated.

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10. Claims 1-4, 7-8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by the Japanese publication JP 4-237968.

As for claims 1, 7-10:

The JP'968 publication discloses a non-aqueous secondary battery comprising a positive electrode 1, a negative electrode 4, a separator 3 dipped in an electrolyte (ABSTRACT) wherein the positive electrode comprises a composite oxide expressed as follows (SECTION 0005):



The JP'968 also disclose the following lithium composite compound (SECTION 0036):

[0036]

[47]



*Thus, when  $y = 0$  (that is to say, the molar amount of Mg is 0) the composite oxide of the prior art anticipates the instant claims.*

As for claims 1-3 and 7-10:

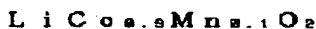
The specific lattice constant, BET specific surface area and crystallite size are inherent because the prior art product seems to be identical except that the prior art is silent as to such inherent characteristics. *See MPEP 2112.*

With respect to claim 4:

The JP'968 also disclose the following lithium composite compound (SECTION 0036):

[0036]

[47]

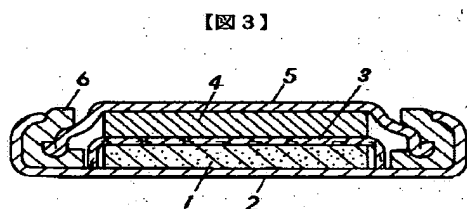


*Thus, when  $y = 0$  (that is to say, the molar amount of Mg is 0) the composite oxide of the prior art anticipates the instant claims.*

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As for claim 10:

Figure 3 below shows the battery comprising an anode, a cathode, a separator, an electrolyte therein.



Hence, the claims are anticipated.

11. Claims 1-4, 7-8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by the Japanese publication JP 11-67209.

As for claims 1, 7-10:

The JP'968 publication discloses a lithium secondary battery comprising a positive electrode active material, a negative electrode, and a non-aqueous electrolyte (ABSTRACT) wherein the positive electrode active material comprises a complex oxide having a specific formula (SECTION 0018):

【0018】また、乳鉢中にて、 $\text{LiOH}$ と $\text{CoCO}_3$ とを、 $\text{Li}:\text{Co}$ の原子比換算 $1.0:1.0$ （実施例1、4～6）又は $\text{LiOH}$ と $\text{CoCO}_3$ と $\text{Mn}_2\text{O}_3$ とを、 $\text{Li}:\text{Co}:\text{Mn}$ の原子比換算 $1.0:0.9:0.1$ （実施例2）又は $1.0:0.6:0.4$ （実施例3）で混合した後、乾燥空気雰囲気下にて、 $750^\circ\text{C}$ で20時間加熱処理して、式 $\text{LiCoO}_2$ （実施例1、4～6）、式 $\text{LiCo}_{0.9}\text{Mn}_{0.1}\text{O}_2$ （実施例2）又は式 $\text{LiCo}_{0.6}\text{Mn}_{0.4}\text{O}_2$ （実施例3）で表される3種の複合酸化物(ii)を得た。次いで、これらの複合酸化物(ii)を、ジェットミルを用いて粉碎して、粒子のメジアン径が約 $0.1\mu\text{m}$ の3種の被覆層(B)用粉末を得た。

*Thus, when  $y = 0$  (that is to say, the molar amount of Mg is 0) the composite oxide of the prior art anticipates the instant claims.*



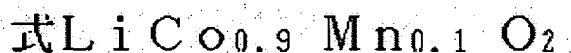
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As for claims 1-3 and 7-10:

The specific lattice constant, BET specific surface area and crystallite size are inherent because the prior art product seems to be identical except that the prior art is silent as to such inherent characteristics. *See MPEP 2112.*

With respect to claim 4:

The JP'209 discloses the following lithium composite compound (SECTION 0018):



*Thus, when  $y = 0$  (that is to say, the molar amount of Mg is 0) the composite oxide of the prior art anticipates the instant claims.*

As for claim 10:

The abstract teaches that the battery comprising an anode, a cathode, and an electrolyte (ABSTRACT).

Therefore, the claims are anticipated.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (703) 306-3326. The examiner can normally be reached on Monday-Thursday (8:30 am - 7:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (703) 308-2383. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Raymond Alejandro  
Examiner  
Art Unit 1745

A handwritten signature in black ink, appearing to read 'RAM', is written over the printed name 'Raymond Alejandro'.